

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/019001

**A. CLASSIFICATION OF SUBJECT MATTER**  
Int.Cl<sup>7</sup> H01L27/10, G11C13/00, G11B7/24, H01L45/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> H01L27/10, G11C13/00, G11B7/24, H01L45/00Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005  
Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| A         | JP 2002-512439 A (ENERGY CONVERSION DEVICES,<br>INC.),<br>23 April, 2002 (23.04.02),<br>Full text<br>& WO 1999/054128 A1    | 1-18                  |
| A         | JP 2001-502848 A (ENERGY CONVERSION DEVICES,<br>INC.),<br>27 February, 2001 (27.02.01),<br>Full text<br>& WO 1998/019350 A1 | 1-18                  |

 Further documents are listed in the continuation of Box C. See patent family annex.

|  |  |
|--|--|
| * Special categories of cited documents: |  |
| "A"                                      | document defining the general state of the art which is not considered to be of particular relevance   |
| "E"                                      | earlier application or patent but published on or after the international filing date  |
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| "O"                                      | document referring to an oral disclosure, use, exhibition or other means   |
| "P"                                      | document published prior to the international filing date but later than the priority date claimed   |
| "T"                                      | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
| "X"                                      | document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone   |
| "Y"                                      | document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "&"                                      | document member of the same patent family  |

Date of the actual completion of the international search  
26 January, 2005 (26.01.05)Date of mailing of the international search report  
08 February, 2005 (08.02.05)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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International application No.  
PCT/JP2004/019001

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|-----------|--|-----------------------|
| A         | JP 11-514150 A (ENERGY CONVERSION DEVICES, INC.),<br>30 November, 1999 (30.11.99),<br>Full text<br>& WO 1997/015954 A1         | 1-18                  |
| A         | JP 11-510317 A (ENERGY CONVERSION DEVICES, INC.),<br>07 September, 1999 (07.09.99),<br>Full text<br>& WO 1997/005665 A1        | 1-18                  |
| A         | WO 2003/050872 A1 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.),<br>19 June, 2003 (19.06.03),<br>Full text<br>(Family: none)      | 1-18                  |
| A         | WO 2000/054982 A1 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.),<br>21 September, 2000 (21.09.00),<br>Full text<br>(Family: none) | 1-18                  |
| A         | JP 55-008830 B1 (Matsushita Electric Industrial Co., Ltd.),<br>06 March, 1980 (06.03.80),<br>Full text<br>(Family: none)       | 1-18                  |
| A         | JP 2003-229537 A (Hitachi, Ltd.),<br>15 August, 2003 (15.08.03),<br>Full text<br>& US 2003/0146469 A1                          | 1-18                  |